

Applicant submits that Tsuchiya *et al.* does not teach a solid golf club head, and thus, one skilled in the art would not combine the crown 5 originally designed for use in a solid golf club head, as taught in Tsuchida, in the hollow club head main body 10 of Tsuchiya *et al.* given the differences in physical characteristics between hollow golf club heads and solid golf club heads. In addition, Hoshi fails to provide any additional motivation to cure the deficiencies in the combination of Tsuchiya *et al.* and Tsuchiya, as discussed below.

Specifically, Tsuchida classifies wood golf club heads into two types (see col. 1, lines 15-19):

- (a) a solid-type head (made of wood such as persimmon); and
- (b) a shell-type head.

Tsuchida further classifies the (b) shell-type head into the following (see col. 1, lines 19-24):

- (b-1) “a [cavity] construction defined by a shell made of metal or FRP”;
- and
- (b-2) a type including a core made of foam resin or the like and wholly embracing by a like shell.

In the subsequent detailed description of the preferred embodiments, Tsuchida teaches a golf club head of the (b-2) type which includes a core made of foam resin. Tsuchida discloses a club head made of a first shell 13 (col. 2, lines 32-34) and a second shell 11 which are both made of FRP, and having a foam synthetic resin 12 provided in the golf club head (see col. 2, lines 30-34). In other words, Tsuchida teaches that there are two types of shell-type heads and *teaches away* from the (b-1) cavity construction type in the discussion of the disclosed preferred

embodiment. Therefore, one skilled in the art would not modify Tsuchiya *et al.* with the teachings of Tsuchida given Tsuchida's teachings away from having a hollow core.

Moreover, one skilled in the art would not combine the references in the manner suggested by the Examiner because the disclosure of Tsuchiya *et al.*, for enlarging a sweet spot without any substantial increase in weight (col. 3, lines 44-48), *teaches away* from having a solid golf club head and the accompanying increase in weight.

Specifically, Tsuchiya *et al.* discloses that "it is the object of the present invention to enable enlargement in sweet spot of a golf wood club head having a hollow metallic shell construction without any substantial increase in weight as well as difficulty in production." *See* col. 3, lines 44-48 (emphasis added). Tsuchiya *et al.* also discloses that "CFRP club heads allow free increase in size, i.e. in volume. However, their relative low moment of inertia near 2700 g*cm² allows no free enlargement in sweet spot as in the case of the wooden club heads." *See* col. 2, lines 3 to 7.

In contrast, the golf club head taught by Tsuchida includes a foam resin 12 disposed therein. This foam resin 12 increases the weight of the golf club head by about 10g. For example, JPA Patent Publication No. 01-190374 (JPA-Hei. 1 -190374) which shows that a foam resin provided in a hollow portion of a golf club head weigh about 10g. The JPA Patent Publication No. 01-190374 is attached herewith as "ATTACHMENT A". The following is a partial English translation of the relevant portion of the Japanese-language reference.

Hard polyurethane liquid of about 10g, which has been prepared to have 0.15 in specific gravity, is injected into a hollow portion 4 of a head main body manufactured in an embodiment-1 to form a foam body, thereby manufacturing a head having 205g in weight (page 4, left column, embodiment-2; emphasis added).

The foam resin (about 10 g) of Tsuchida involves a substantial increase in weight of a golf club head. Therefore, Tsuchida does not provide any motivation for one skilled in the art to have the foam resin provided inside the hollow core taught by Tsuchiya *et al.*

In addition, one skilled in the art would not combine the teachings of Hoshi *et al.* with the teachings of Tsuchiya *et al.* and Tsuchida. In the Office Action, the Examiner argues that “Hoshi shows a club head in which the crown portion (14b) is made of a material in which the Young’s modulus differs from the modulus of at least the sole portion (col. 6, lines 4-16).” To the contrary, Hoshi *et al.* merely discloses having a crown portion and a sole portion with different *rigidity* that is controlled by adjusting the wall thickness. *See* col. 2, lines 56-59. Rather, Hoshi *et al.* suggests the use of a single material for the entire club head, i.e., suggests a club head having the same Young’s modulus for all parts of the club head. *See* col. 2, lines 59-21.

Although the Examiner states that in Hoshi, “a distinct relationship has been acknowledged among the desired Young’s modulus, the thickness of the crown, and the material chosen,” Hoshi, nevertheless, suggests having a club head with a *uniform* Young’s modulus. *See id.*

For at least the above reasons, claims 1 and 7 are patentable.

Claims 2-6, which depend from claim 1, and claims 8-12, which depend from claim 7, are patentable for at least the reasons submitted for their base claims.

As for the Examiner's comment that "the applicant has not invented the claimed materials having the claimed Young's modulus values and since the applicant has merely selected materials exhibiting a Young's modulus that is optimally compatible with the particular thickness of the shell, the specific claimed values are not deemed critical," such assertions are based on per se rules of obviousness which have been held to be founded on legal error. Per se rules of obviousness substitutes supposed per se rules for the particularized inquiry required by 35 U.S.C. § 103 and necessarily produces erroneous results. *In re Ochiai*, 71 F.3d 1565, 1570 (Fed. Cir. 1995). Applicant respectfully requests the Examiner to provide prior art which provides the basis for the Examiner's statement regarding the supposedly obvious nature of having a club head body having the claimed dimensions and/or properties in claims 3-5 and 9-11.


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Response Under 37 C.F.R. § 1.111
U.S. Patent Application No. 10/802,874

Attorney Docket No.: Q80281

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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